100 **HIGH TEMPERATURE (TC GREATER THAN 30 K) SUPERCONDUCTOR MATERIAL (I.E., ELEMENT, COMPOUND, OR COMPOSITION), PER SE**

110 .Having Tc greater than or equal to 150 K

120 .Thallium (Tl) containing

121 .Bismuth (Bi) containing

122 .Organic polymer containing

123 .Halogen [i.e., fluorine (Fl), chlorine (Cl), bromine (Br), iodine (I), astatine (At)] containing

124 .Free metal containing

125 .Copper (Cu) and oxygen (O) containing

126 ..Containing three atoms of copper to between six and seven atoms of oxygen [e.g., YCu3O(7-@), LaCu3O(6+*), etc.]

150 **HIGH TEMPERATURE (TC GREATER THAN 30 K) DEVICES, SYSTEMS, APPARATUS, COM- PONENTS, OR STOCK, OR PROCESSES OF USING**

160 .Measuring or testing system or device

161 ..Bolometer

162 ..Magnetic field sensing system or device (e.g., SQUID, etc.)

163 .Significant cryogenic refrigeration system having superconductor component as part of the system or having superconductor device or material to be cooled present therewith (e.g., Peltier effect device, etc.)

164 .Projectile or launching device or system

165 .System, device, or component utilizing suspension of superconducting particulate material in liquid (e.g., seal, pump, etc.)

166 .Dynamoelectric machine (e.g., motor, generator, etc.), rotational system or device (e.g., clutch, rotor, bearing, etc.), or components thereof

170 .Information processing (e.g., logic circuits, computer, etc.) or information storage or retrieval system, device, or component (i.e., both dynamic and static)

171 ..Recording by magnetism, magnetic record carriers, or recording head arrangements

180 .Device producing stimulated emission (e.g., laser, maser, etc.)

181 .Photoconductive, light transmissive, light emissive, or light responsive device or component

182 ..Device or arrangement the operation of which is modified by changing optical properties (e.g., reflectivity, transmission, etc.) of superconduc- tive material

183 ..Having optical waveguide

190 .Josephson junction, per se (e.g., point contact, bridge, barrier junction, SIS, SNS, SSS, etc.) or Josephson junction with only terminals or connect

191 .Semiconductor thin film device or thin film electric solid-state device or system (i.e., active or passive)

192 ..Capacitor or including capacitor

193 ..Superconducting transistor (e.g., Josephson transistor, etc.)

200 .Electric discharge tube

201 .Antenna

202 .Electric communication system containing transmitter or receiver of pulse, digital, or electromagnetic radio, television, or radar wave form

203 .Electroacoustic transducer

204 .Device or system with electronic circuitry for generation of oscillations

210 .High frequency waveguides, resonators, electrical networks, or other devices of the waveguide type (e.g., phase shifters, cavity filters, etc.)

211 .Electrical energy storage device (e.g., accumulator, etc.), inductor, transformer, magnetic switch, magnetic ring, sphere, coil, or magnetic arrangement
212 ..Truncated hollow spherical or truncated cylindrical flux source bodies (e.g., magic hemisphere, magic half-ring, etc.)
213 ..Noncoiled hollow magnetic arrangement
220 .Superconductor having metal connect, pad, connect structure, or patterned superconductor circuit, per se
230 .Superconducting wire, tape, cable, or fiber, per se
231 ..Having plural superconducting wire or superconducting fiber component (e.g., multifilament wire, etc.)
232 ..Having nonsuperconducting core
233 .Superconducting layer and organic or free carbon layer (i.e., adjacent or nonadjacent to superconductor)
234 .Superconductor next to superconductor
235 .Superconductor layer and one semiconducting or silicon (Si) layer
236 .Superconductor layer next to free metal containing layer
237 .Superconductor next to two or more nonsuperconductive layers
238 .Superconductor next to layer containing nonsuperconducting ceramic composition or inorganic compound (e.g., metal oxide, metal nitride, etc.)
239 .Substrate for supporting superconductor
300 **PROCESSES OF PRODUCING OR TREATING HIGH TEMPERATURE (TC GREATER THAN 30 K) SUPERCONDUCTOR MATERIAL OR SUPERCONDUCTOR CONTAINING PRODUCTS OR PRECURSORS THEREOF**
310 .With measuring or testing of superconducting properties
320 .Producing lattice imperfection flux pinning sites or increasing critical current density through particle bombardment, electromagnetic wave energy, or using fissionable material
325 .Utilizing particle (e.g., electron beam, ion, etc.) bombardment or electromagnetic wave energy (e.g., laser, etc.) treatment of selected regions to form conducting or insulating areas
329 .Producing Josephson junction, per se (e.g., point contact, bridge, barrier junction, SIS, SNS, SSS, etc.)
330 .Semiconductor device or thin film electric solid-state device manufacture
400 .Using magnetic field (e.g., for aligning, texturizing, classifying, etc.)
401 .Using sonic, ultrasonic, or vibrational energy (e.g., shock processing, vibration compacting, etc.)
410 .With material removal by etching, laser ablation, or mechanical abrasion
411 ..Utilizing plasma etching or sputter etching
412 ..Laser ablation
413 ..Utilizing mask (e.g., photoresist, etc.)
420 .With glass forming, working, or treating
425 .Producing powder or short fiber (i.e., less than 15 cm) by spraying, dropping, or slinging of solution, suspension, or melt (e.g., spray-drying, atomizing, etc.)
430 .Process of making wire, tape, cable, coil, or fiber
431 ..Making multifilament
432 ..Isostatic pressing (e.g., HIP, hydrostatic pressing, etc.)
433 ..With metal deforming, metal wrapping, or metal coiling
434 ..With coating
440 .Utilizing sol or gel
441 .With precipitating from solution

445 .Using an organometallic intermediate (e.g., ligand, chelate, clathrate, etc.)
446 ..Including coating step
447 ...Vapor deposition
450 .With melting
451 ..With zone melting, zone solidification, or seed pulling
452 ..And coating or impregnating with melt
460 .Producing fullerene (i.e., C60) type superconductor or analog thereof
461 .Producing halogen [i.e., fluorine (Fl), chlorine (Cl), bromine (Br), or astatine (At)], containing superconductor
470 .Coating
471 ..Printing (e.g., screen printing, etc.) or application with solid coating means
472 ..Electrolytic or electrophoretic coating
473 ..Vapor deposition
474 ...Laser evaporative (i.e., ablative) coating
475 ...Sputtering
476 ....RF sputtering (e.g., 13.56 MHz, etc.)
477 ...Using plasma
480 .Utilizing electromagnetic wave energy, ion, or plasma
481 .Including exothermic reaction or ignition of binder
482 .Treating with high pressure oxygen
483 .Utilizing fluid bed
490 .Shaping or consolidating (e.g., pelletizing, compacting, etc.)
491 ..Utilizing isostatic pressure (e.g., HIP, etc.) or specified pressure
492 ..Bismuth (Bi) or thallium (Tl) containing
500 .Heating, annealing, or sintering
501 ..Bismuth (Bi) or thallium (Tl) containing
510 **PRECURSOR OF HIGH TEMPERATURE (TC GREATER THAN 30 K) SUPERCONDUCTOR MATERIAL OR STOCK, PER SE, OR PROCESS OF PRODUCING THE PRECURSOR**
511 .Target for coating
512 ..Organometallic (e.g., ligand, clathrate, oxalate, etc.)

CROSS-REFERENCE ART COLLECTIONS

A. INVOLVING HIGH TEMPERATURE MATERIAL (TC ABOVE 30 K)

700 **HIGH TC (ABOVE 30 K) SUPERCONDUCTING DEVICE, ARTICLE, OR STRUCTURED STOCK**
701 .Coated or thin film device (i.e., active or passive)
702 ..Josephson junction present
703 ..Microelectronic device with superconducting conduction line
704 .Wire, fiber, or cable
705 ..Magnetic coil
706 .Contact pads or leads bonded to superconductor
725 **PROCESS OF MAKING OR TREATING HIGH TC (ABOVE 30 K) SUPERCONDUCTING SHAPED MATERIAL, ARTICLE, OR DEVICE**
726 .Measuring or testing of superconducting property
727 .Using magnetic field
728 .Etching
729 .Growing single crystal (e.g., epitaxy, bulk)
730 .Vacuum treating or coating
731 ..Sputter coating
732 ..Evaporative coating with superconducting material
733 .Rapid solidification (e.g., quenching, gas-atomizing, melt-spinning, roller-quenching)
734 .From organometallic precursors (e.g., acetylacetonates)
735 ..By sol-gel process
736 .From free metal precursors
737 .From inorganic salt precursors (e.g., nitrates)
738 ..By precipitating
739 .Molding, coating, shaping, or casting of superconducting material
740 ..To form wire or fiber
741 ..Coating or casting onto a substrate (e.g., screen printing, tape casting)
742 .Annealing

775 **HIGH TC (ABOVE 30 K) SUPERCONDUCTING MATERIAL**
776 .Containing transition metal oxide with rare earth or alkaline earth
777 ..Lanthanum (La)-(e.g., La2Cu04)
778 ...Alkaline earth (i.e., Ca, Sr, Ba, Ra)- [e.g., La(2-x)Ba(x)CuO4]
779 ..Other rare earth (i.e., Sc,Y,Ce,Pr,Nd,Pm,Sm,Eu,Gd,Tb,Dy,Ho,Er,Tm,Yb,Lu) and alkaline earth (i.e., Ca,Sr,Ba,Ra)
780 ...Yttrium(Y) and barium(Ba)-(e.g., YBa2Cu307)
781 ....Noble metal (i.e., Ag, Au, Os, Ir, Pt, Ru, Rh, Pd) or chromium(Cr), manganese(Mn), iron(Fe), cobalt(Co), or nickel(Ni)-[e.g., YBa2Cu(3-x)Fe(x)O(y)]
782 ..Bismuth(Bi)-(e.g., BiCaSrCu0)
783 ..Thallium(Tl)-(e.g., Tl2CaBaCu308)
784 .Bismuth(Bi)-(e.g., BaKBi0)
785 .Composition containing superconducting material and diverse nonsuperconducting material
950 **MANUFACTURING SYSTEM OR APPARATUS FOR MAKING HIGH TEMPERATURE (I.E., TC GREATER THAN 30 K) SUPERCONDUCTOR PRODUCT, DEVICE, ARTICLE OR STOCK (I.E., WHICH SYSTEM OR APPARATUS DOES NOT ITSELF CONTAIN A SUPERCONDUCTING COMPONENT)**
951 **NPL PLUS FP HIGH TEMPERATURE (TC GREATER THAN 30 K) SUPERCONDUCTOR: MATERIAL (I.E., ELEMENT, COMPOUND, OR COMPOSITION) DEVICES, SYSTEMS, APPARATUS, COMPONENTS, STOCK, PROCESSES OF USING SAME, OR PROCESSES OF PRODUCING OR TREATING HIGH TEMPERATURE (TC GREATER THAN 30 K) SUPERCONDUCTOR MATERIAL OR SUPERCONDUCTOR CONTAINING PRODUCTS OR PRECURSORS THEREOF**

B. INVOLVING LOW TEMPERATURE SUPERCONDUCTORS (TC AT OR BELOW 30 K)

800 **MATERIAL, PER SE, PROCESS OF MAKING SAME**
801 .Composition: (Classes 75, 252, 501)
802 ..Organic
803 ..Magnetic
804 ..Amorphous alloy
805 ..Alloy or metallic: (Class 420,420/901)
806 ...Niobium base (Nb)
807 ..Powder: (Class 75)
808 ..Liquid crystal: (Class 252)
809 ..Ceramic: (Class 501)
810 .Compound: (Class 423)
811 ..Organic: (Classes 520-570)
812 .Stock: (Class 428, 428/930)
813 ..Wire, tape, or film
814 ..Treated metal: (Class 148/400+)
815 .Process of making, per se
816 ..Sputtering, including coating, forming, or etching (Class 204/192.24)
817 ...Forming Josephson element
818 ..Coating: (Classes 204, 427/62)
819 ...Vapor deposition
820 ...And etching
821 ...Wire
822 ..Shaping: (Classes 148, 264)
823 ..Powder metallurgy: (Class 419)
824 ..Battery, thermo or photo-electric: (Class 136)
825 **APPARATUS, PER SE, DEVICE, PER SE, OR PROCESS OF MAKING OR OPERATING SAME**
826 .Coating: (Class 118)
827 .Code converter: (Class 340)
828 .Modulator: (Class 332), demodulator, or detector: (Class 329)
829 .Electrical computer or data processing system (Class 364)
830 .Electrical pulse counter, pulse divider, or shift register: (Class 377)
831 .Static information storage system or device: (Class 365, 365/160)
832 ..Josephson junction type: (Class 365/162)
833 ..Thin film type: (Class 365/161)
834 ...Plural (e.g., memory matrix, etc.): (Class 365/161)
835 ....Content addressed (i.e., associative memory type): (Class 365/49, 161)

836 ....Location addressed (i.e., word organized memory type: (Class 365/161)
837 ....Random access (i.e., bit organized memory type): (Class 365/161)
838 ..Plural (e.g., memory matrix, etc.): (Class 365/160)
839 ...Content addressed (i.e., associative memory type): (Class 365/160)
840 ...Location addressed (i.e., word organized memory type): (Class 365/160)
841 ...Random access (i.e., bit organized memory type): (Class 365/160)
842 .Measuring and testing: (Classes 73, 324, 356, and 374)
843 ..Electrical: (Class 324)
844 ...Nuclear magnetic resonance (NMR) system or device: (Class 324)
845 ...Magnetometer: (Class 324/248)
846 ....Using superconductive quantum interference device (i.e., SQUID): (Class 324/248)
847 ..Thermal: (Class 374)
848 .Radiant energy application: (Class 250)
849 ..Infrared responsive electric signaling: (Class 250/338+)
850 .Protective circuit: (Class 361/19)
851 .Control circuit for electromagnetic device: (Class 361/141)
852 .Electric motor control: (Class 318)
853 .Oscillator: (Class 331)
854 ..With solid-state active element: (Class 331/107S)
855 .Amplifier: (Class 330)
856 .Electrical transmission or interconnection system: (Class 307)
857 ..Nonlinear solid-state device system or circuit: (Class 307/200+)
858 ...Digital logic: (Class 307/476)
859 ....Function of AND, OR, NAND, NOR or NOT: (Class 307/462)
860 ...Gating (i.e., switching) circuit: (Class 307/245)
861 ....With Josephson junction: (Class 307/245)
862 ....With thin film device: (Class 307/245)
863 ...Stable state circuit for signal shaping, converting, or generating: (Class 307/277)
864 ....With Josephson junction: (Class 307/277)
865 ...With Josephson junction: (Class 307/306)
866 .Wave transmission line, network, waveguide, or microwave storage device: (Class 333/99S)
867 .Electric power conversion system: (Class 363)
868 ..Current conversion: (Class 363/14)
869 .Power supply, regulation, or energy storage system: (Class 323)
870 ..Including transformer or inductor: (Class 323/360)
871 .Magnetic lens: (Class 250/396)
872 .Magnetic field shield: (Class 307/91)
873 .Active solid-state device: (Class 257)
874 ..With Josephson junction (e.g., SQUID, etc.): (Class 257)
875 ..Combined with housing and cryogenic fluid cooling: (Class 257)
876 .Electrical generator or motor structure: (Class 310)
877 ..Rotary dynamoelectric type: (Class 310/40+)
878 ...With cooling: (Class 310/52+)
879 .Magnet or electromagnet: (Class 335/216)
880 .Inductor: (Class 336/DIG 1)
881 .Resistance device responsive to magnetic field: (Class 338/32S)
882 .Circuit maker or breaker: (Class 200)
883 .Housing and mounting assembly with plural diverse electrical components: (Class 361/331+)
884 .Conductor: (Class 174)
885 ..Cooling, or feeding, circulating, or distributing fluid; in superconductive apparatus: (Class 174/15CA)

886 ...Cable: (Class 174/15S)
887 ..Conductor structure: (Class 174/126S and 128S)
888 .Refrigeration: (Class 62)
889 ..Utilizing rare earth material
890 ..Heat pipe device
891 ..Magnetic or electrical effect cooling
892 ..Magnetic device cooling
893 ...Spectrometer
894 ..Cyclic cryogenic system (e.g., Sterling, Gifford-McMahon, etc.)
895 ...With regenerative heat exchanger
896 ..Special refrigerant compound
897 ..Cryogenic media transfer
898 ..Cryogenic envelope
899 ..Method of cooling
900 .Heat exchange: (Class 165)
901 ..Heat pipe
902 .Railway (e.g., rapid transit, etc.): (Class 104)
903 ..Suspension (e.g., magnetic, electrodynamic, etc.)
904 ...Guidance means (i.e., in addition to the track)
905 ...Motor structure
906 ...Switching device (i.e., electrical not railway stock diverting)
907 ...Support structure
908 ...Method of operation
909 .Power plant: (Class 60)
910 .Pump: (Class 417)
911 .Fluid reaction surface (i.e., impeller): (Class 416)
912 .Metal founding: (Class 164)
913 ..Casting process
914 ...Using magnetic or electric field
915 ...Making composite product
916 ...Continuous casting
917 .Mechanically manufacturing superconductor: (Classes 29, 72, and 228)
918 ..With metallurgical heat treating
919 ...Reactive formation of superconducting intermetallic compound
920 ....Utilizing diffusion barrier
921 ....Metal working prior to treating
922 ..Making Josephson junction device
923 ..Making device having semiconductive component (e.g., integrated circuit, etc.)
924 ..Making superconductive magnet or coil
925 ..Making superconductive joint
926 ..Mechanically joining superconductive members
927 ..Metallurgically bonding superconductive members
928 ..Metal deforming
929 ...By extruding
930 ...By drawing
931 .Classifying, separating, and assorting solids using magnetism: (Class 209)
932 ..Separating diverse particulates
933 ...In liquid slurry

FOREIGN ART COLLECTIONS

FOR 000 **CLASS-RELATED FOREIGN DOCUMENTS**